DLM1772Y-DLM1775Y

Integrated Camera Positioning

w/Dual IR Lamps

Installation and Operations Manual

Model Number: DLM1772Y-DLM1775Y

Description: Integrated Camera Positioning System
With dual IR Lamps and
Day/Night 23x, 26x, 36x Zoom

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1. INSTALLATION MANUAL

1.1 FOREWORD

This manual introduces the function, installation and operation of the integrated high speed pan tilt camera in details. Please thoroughly familiarize yourself with the information in this manual prior to installation.

This series pan tilt camera is specially designed for airports, homeland security, customs, highway etc. It has many features: reliable, stable, airproof, waterproof, acid water proof, able to withstand high temperature, aging, strong wind and so on. It adapt to the following harsh conditions, such as high wind power, wide changing temperature conditions, high electromagnetism and lightning and continuous operating conditions.

This series integrated positioning system includes high speed decoder, pan tilt, shield, heater, defroster, wiper and integrated DSP ((digital signal processing) camera module day/night 23x, 26x, 36x optical and 12x digital zoom.

Protocol P/D is employed in the received driver of the integrated positioning system. It may support standard system platforms such as keyboards and matrix switchers. This manual will not explain the operation of other devices if connecting with system, please read the manual of the interfacing product or device.

1.2 SAFEGUARD AND WARNINGS

Prior to installation and use of this product, the following WARNING should be observed. This product may be only used in specified range in order to avoid any damage or danger.

- Installation and servicing should only be done by qualified service personnel;
- It may not be used in temperature range, humidity and power supply outside the specifications.
- Only use replacement parts recommended by factory.
- Please use soft cloth to clean the glass. Use neutral cleaner if smear is present on the glass. No use of strong or corrosive cleanser to avoiding scuffing.
- Be cautious when moving P/T unit, never press the drive parts heavily to avoid pan tilt camera troubles.
- The installation bracket should be capable of supporting four times the total weight of the integrated camera.

Please thoroughly read this manual prior to installation and operation.

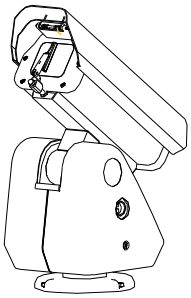
1.3 FUNCTIONS AND FEATURES :

- Pan tilt camera is made of high strength all-alloy material, waterproof, and able to withstand high temperature, aging, and erosion.
- Accurate motor driving, stable operation, sensitive reaction and accurate orientation
- Includes built-in function menu, to set camera and pan/tilt parameters.
- Features video freeze, back light compensation function
- Pattern track memory function, may record the preset transfer and all standard P/T/Z track

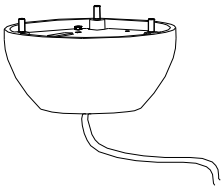
- Change speed proportionally - Pan/tilt speed and the depth of zoom lens decline proportionally
- 128 preset position, with accuracy error less than 0.1^0
- Preset target speed: 150^0 /sec for pan, 80^0 /sec for tilt
- Manual control speed: 0.1~100^0/sec for pan control, 0.1~80^0/sec for tilt
- Alterable auto scan speed: 1^0~40^0 /sec may be set by the in-built menu
- 8 preset tour functions, dwell time may be set to 2- 60sec
- Pan rotation :360^0 continuously rotating
- Tilt rotation: -85~ +35^0 rotation, with auto flip function
- Manual control speed for pan: 0.1^0 ~100^0/sec
- Manual control speed for tilt: 0.1^0 ~80^0/sec
- Video output: PAL/ NTSC format, composite video: 1V p-p
- Baud rate: 1200/2400/4800/9600b
- RS-485 communication for control of pan tilt
- Built-in wiper, heater, fans, defrost module
- Embedded surge and lightning circuitry
- Complies with CE, FCC and IP66 standards,
- Working temperature: -40 °C ~ +50 °C

1.4 PEDESTAL INSTALLATION

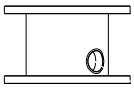
The pedestal installation camera includes the following parts. Inspect each package to make sure all parts are present.



Integrated pan tilt



rotating platform

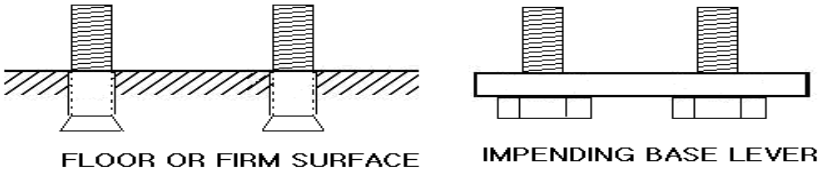


pedestal

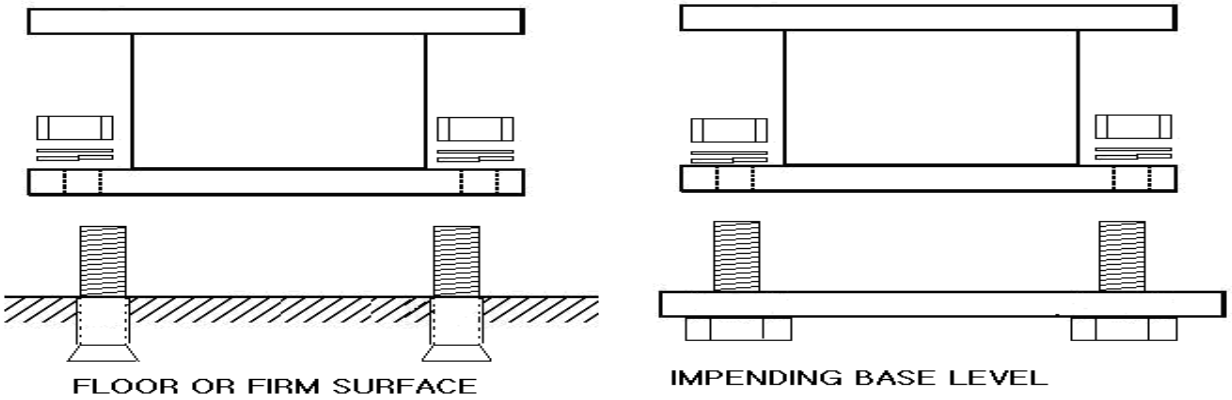
Integrated pan tilt	1 pc
Rotating platform（with connect cables）	1 pc
pedestal	1 pc
base bracket	1 pc
connecting cables	1 pc
fixed spanner	1 pc
pedestal water joint	1 pc
manual	1 set
Glove	1 pair
Thread compound	1 roll
Fixed screw Φ5X10mm (for rotate platform)	4 pcs
Φ8mm screws	4 sets
Φ8X38mm bolts	12 sets

Steps of pedestal installation:

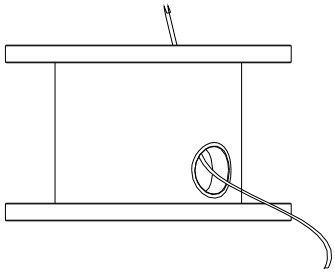
STEP 1 Locate the floor or impending base level that may support 4 times the weight of pan tilt. Fix the screws provided on the floor or firm surface.



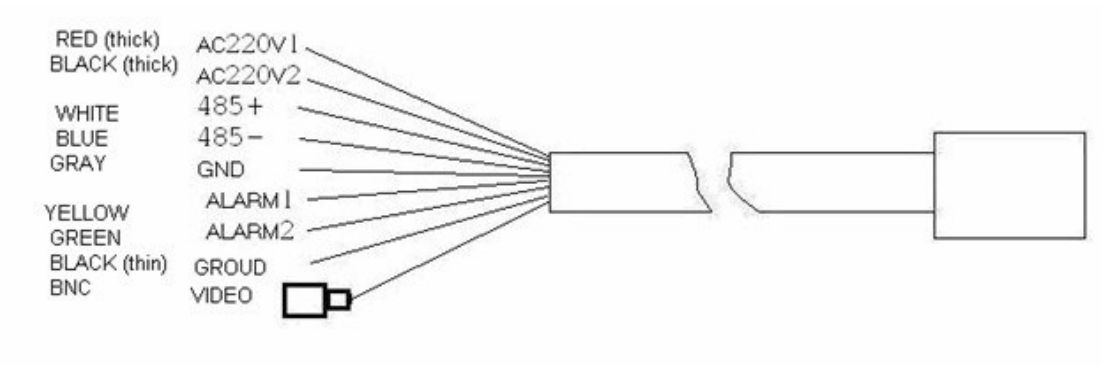
STEP 2 fix the pedestal on the floor or impending base level:



STEP 3 Install power supply, video output, RS-485 control input wiring through waterproof connector plugs, and connect them to the corresponding power supply, video, RS-485 wiring of the cable provided.

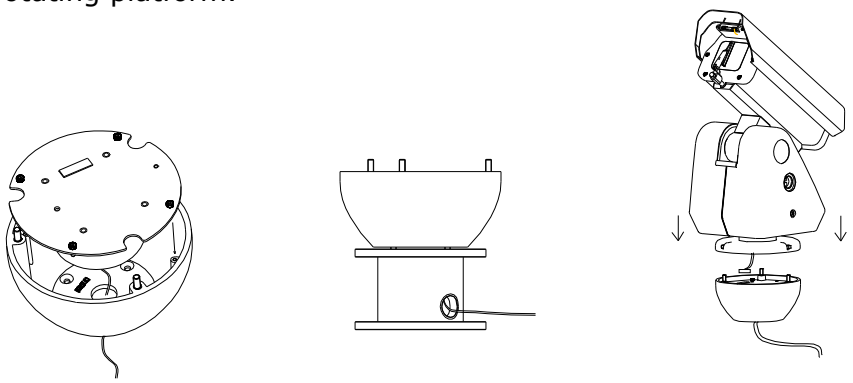


Connect the cable according to the following pinout diagram:



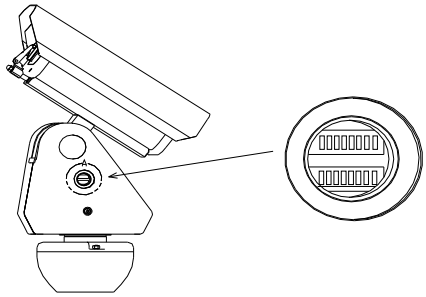
STEP 4 Loosen the four Φ3mm screws on the fixed rotating platform and remove the transformer fixed board module from the rotating platform. There are four installation holes under the rotating platform.

Fix the four Φ5x10 fixed screws on the pedestal, then install the connecting cable into the pedestal and screw it with waterproof BNC plugs. Re-install the transformer board module on the rotating platform.



STEP 5 Insert the connecting cable of the pan tilt's pedestal into 2x11 pin plug following the 2x11 pin plug direction instruction. Then install the three mounting holes of the pedestal on to the three lugs on the rotating platform and tighten with nuts provided.

STEP 6 Loosen the screw nut cover on the pan tilt's left side, to expose the 8 DIP dial switch. Set the protocol, baud rate, address for the pan tilt. Screw the nut cover tightly after completion of settings.



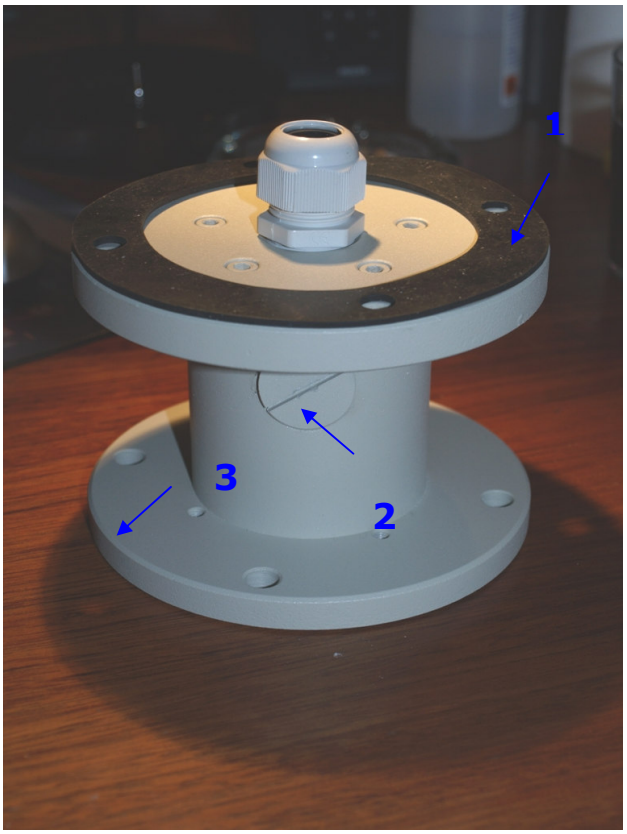
STEP 7 Turn on the power to check operation.

DLM1778 Pedestal Mount

* Inverted View of mount
* Maximum Bearing Weight 100Kg
* Aluminum alloy material

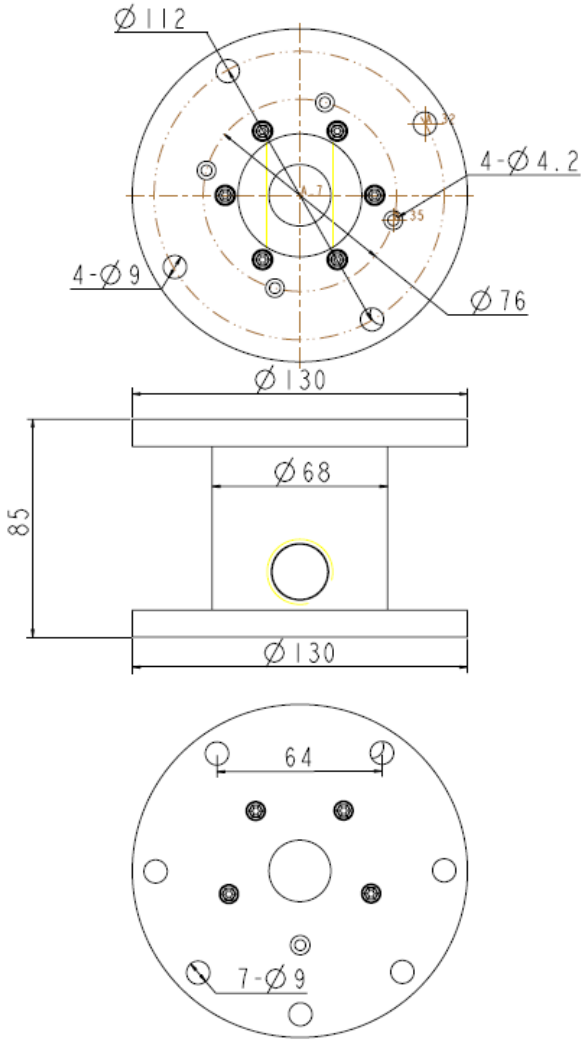
1. Rubber Gasket for top of pole
2. Cable Gland cover
3. Top of mount for installing

DLM1778 Integrated camera system



DLM1778 Pedestal Mount

Dimensional Drawing: (unit: MM)

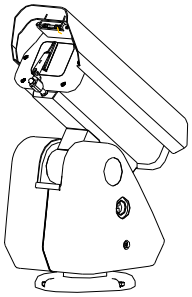


IR Lamp Specifications

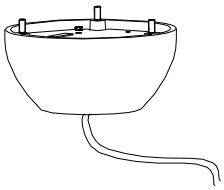
Distance:	100 meters
Angle of View:	45^{0}
IR Lenses & LEDs per Lamp:	7x 1W; 6 LEDs, 8mm dia.
Voltage:	12VDC
Power Consumption:	6W per IR Lamp (feeds off main input)
Dimensions dia. x H:	4.25”(108mm) x 3.3”(85mm)

1.5 WALL INSTALLATION

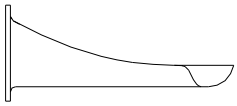
The wall installation camera contains following parts. Inspect each package to make sure all parts are present.



Integrated pan tilt



rotating platform

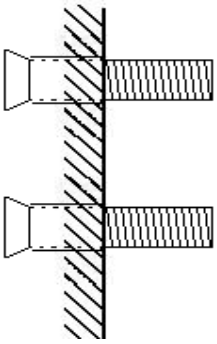


wall bracket

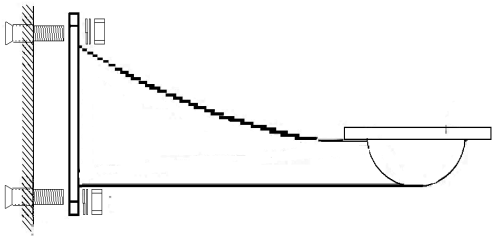
Integrated pan tilt	1 pc
Rotating platform（with connect cables）	1 pc
pedestal	1 pc
wall bracket	1 pc
connecting cables	1 pc
fixed spanner	1 pc
pedestal water joint	1 pc
manual	1 set
Glove	1 pair
Thread compound	1 roll
Fixed screw Φ5X10mm (for rotate platform)	4 pcs
Φ8mm screws	4 sets
Φ8X38mm bolts	12 sets

Steps of wall installation

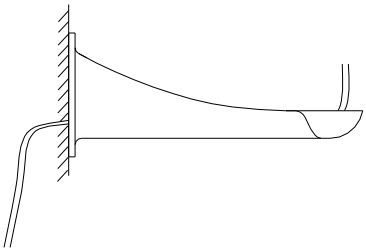
STEP 1 Install the Φ8mm screws on the wall (refer to the following picture)



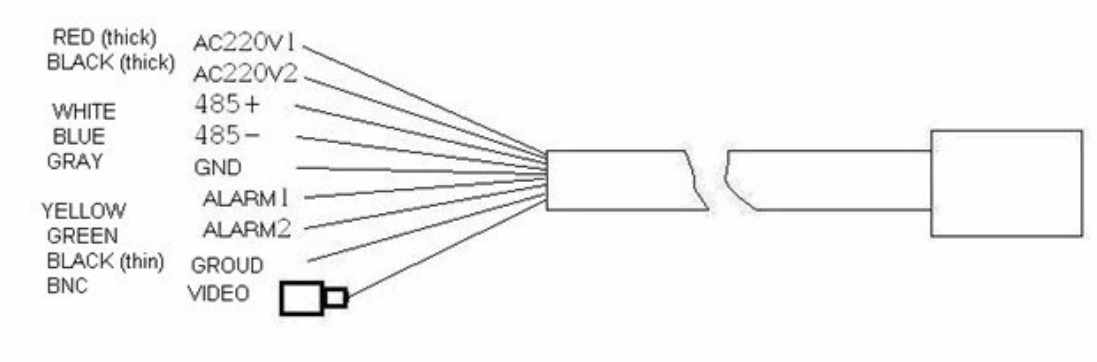
STEP 2 Install the power supply box on the wall if power supply box is required, then install the wall bracket on the power supply box. If no power supply enclosure is needed, install the bracket directly on the wall.



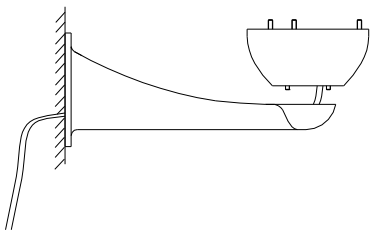
STEP 3 Install power supply, video output, RS-485 control input wiring through the body of the bracket and connect them to the corresponding power supply, video, RS-485 wiring of the cable provided.



Connect the cable according to the following pinout diagram:

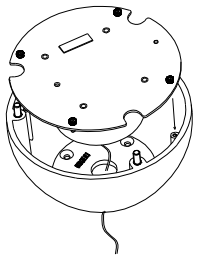


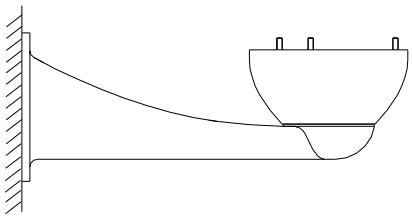
STEP 4 connect the cables. Connect the cables from the platform wih the power supply wiring, video wiring, RS-485 control wiring from bracket accordingly.



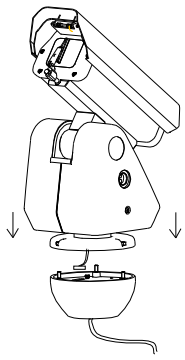
STEP 5 Installing the platform - Loosen the four Φ3mm screws on the fixed rotating platform and remove the transformer fixed board module from the rotating platform. There are four installation holes under the rotating platform.

Check the cables connecting and put them into bracket. Install the four Φ5×10 fixed screws on the pedestal. Then re-install transformer fixed board module on the rotating platform.

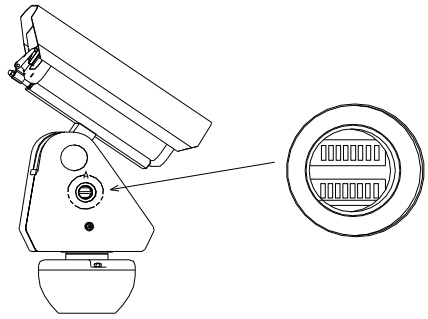




STEP 6 Insert the connecting cable of the pan tilt's pedestal into 2x11 pin plug following the 2x11 pin plug direction instruction. Then install the three mounting holes of the pedestal on to the three lugs on the rotating platform and tighten with nuts provided.



STEP 7 Loosen the screw nut cover on the pan tilt's left side, to expose the 8 DIP dial switch. Set the protocol, baud rate, address for the pan tilt. Screw the nut cover tightly after completion of settings.

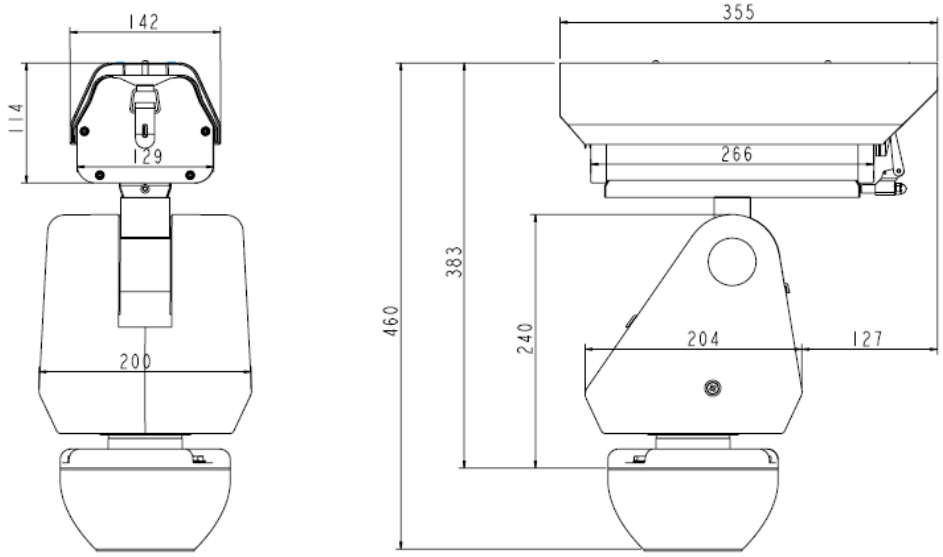


STEP 8 Turn on the power to check operation

1.6 TECHNICAL PARAMETERS

1.6.1 Structure parameters:

Integrated pan tilt	Aluminum alloy
Rotating platform	Aluminum alloy
Bear weight mode	top bear
standard bear weight	5Kg
Shield module	with housing, defrost device, heater and fans
installation	wall mount, pedestal mount
bracket requirement	4 times of the pan tilt's weight
operating temperature	-40ºC ~ 50ºC
Dimension	as the following dimension picture



1.6.2 Rotating parameters:

Pan rotation	360ºcontinuous rotation
Tilt rotation	+35º ~ -85º unobstructed rotation
Manual control speed	
Pan	0.1º ~ 100º/Second manual operation
Tilt	0.1º ~ 80º/Second manual operation
Preset speed	
Pan	150º/ Second
Tilt	80º/Second

1.6.3 Electrical parameters

Input voltage	24VAC, 120VAC, 230VAC, 50/60Hz
Input power	50VA
Coaxial cable requirement:	75 ohms resistant; complete copper core conductor; complete copper shield layer, shield cover range 95%
Heater, defroster, fan, wiper	

1.6.4 camera, lens parameters

Camera Specifications	DLM1972 - 23X Day/Night	DLM1972 - 26X Day/Night	DLM1975 - 36X Day/Night
Image Sensor	¼" Hitachi CCD	¼" SONY CCD	¼" SONY CCD
Resolution	480/550BW TVL	480/570BW TVL	540/650BW TVL
Effective Pixels	NTSC 380k / PAL 450k	NTSC 630k / PAL 740k	NTSC 380k / PAL 440k
Signal Format	NTSC/PAL	NTSC/PAL	NTSC/PAL
Video Output	1V p-p (sync negative)	1V p-p (sync negative)	1V p-p (sync negative)
Lens	23X optical	26X optical	36X optical
Focal Length	f=3.6mm(Wide)~82.8mm(Tele)	f=3.5mm(Wide)~91mm(Tele)	f=3.4mm(Wide)~122.4mm(Tele)
Aperture	F1.6~F3.6	F1.6~F3.8	F1.6~F4.5
Digital Zoom	12X	12X	12X
Min. Working Distance	100mm(Wide)~1000mm(Tele)	320mm(Wide)~1500mm(Tele)	320mm(Wide)~1500mm(Tele)
Sync System	internal/external (V-lock)	internal/external (V-lock)	internal/external (V-lock)
S/N Ratio	>50dB	>50dB	>50dB
Min. Illumination	0.1Color / 0.01BW/LUX	1.0/0.15BW/LUX	0.1/0.01BW/LUX
IRIS	Auto/Manual	Auto/Manual	Auto/Manual
Focus	Auto/Manual	Auto/Manual	Auto/Manual
White Balance	Auto/Manual	Auto/Manual	Auto/Manual
Gain	Auto	Auto/Manual	Auto/Manual
BLC	Auto	Auto/Manual	Auto/Manual

2. OPERATION

2.1 BASIC DESCRIPTIONS

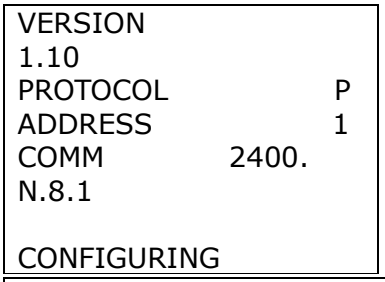
After connecting wires as per instructions in previous section and turning on power, the pan tilt camera will display its configured information. And after initialization, the menu will show "configure OK" information. If the user sets the POWER UP DONE, the camera will execute this movement and the initial screen disappears; if the user does not set the POWER UP DONE, the initial screen information will be seen until the camera receives the control command, then the initial screen will disappear and show the system communication control is normal. If there is no control command, the initial screen will disappear after 3 minutes.

Power up display:

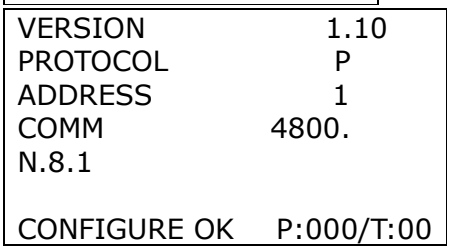
```
VERSION          1.10
PROTOCOL            P
ADDRESS             1
COMM
2400.N.8.1

POWER UP DONE
```

When configuring：



Configure OK:



NOTE: 1. VERSION 1.10 is the software version number of the P/T camera, and it will change as the product's upgrade.

2. PROTOCOL is PTZ control type - supports P, D protocols, and it will change as the dial switch chooses different protocol.

3. ADDRESS 1 is control address, may support 256 addresses, and it will change as the dial switch chooses different address number.

4. COMM 4800.N.8.1 is communication information, 2400 is communication baud rate, there are 1200, 2400, 4800, 9600 four baud rate for different dial switch. N.8.1 means no verify, 8 data bytes, 1 dwell position.

Upon successful configuration, user may operate the camera as the following way:

OPERATION	PROCEDURE
Pan/Tilt	1. To move via control keyboard, camera will rotate to the operation direction if the joystick leans to one direction of up/down/left/right. The speed depends on the distance between joystick and center. The camera will move slowly to the operation direction if move the joystick lightly in one direction. The camera will speed to maximum if the joystick moves in one direction. The camera will stop when the joystick returns to the center. 2. To control the DLM1772-DLM1775, use either the DLI6335 Keyboard or if a Matrix Switcher is installed, unit will be controlled with DLH6330 Keyboard. Matrix Switchers series box type DLH4200B or bay type DLH4400E features RS-422/RS-485 Data PTZ control ports. 3. To control via computer software, press the direction key of control, the camera will rotate to the operating direction. The speed depends on current speed code. Some software may implement continuous rotation and some only may implement dot movement. Please refer to the software instruction provided by the manufacture for detailed operations. The DLM1772-DLM1775 may do 360^{0} continuous pan rotation and $+2^{0}$~-92^{0} vertical rotations. It will stop rotating when the tilt limit is reached.

STOP SCAN	Preset 96 (hit"9"+"6"+ "Preset")
PRESET TOUR	Preset 98 (hit"9"+"8"+ "Preset")
AUTO SCAN	Preset 99 (hit"9"+"9"+ "Preset")
ZOOM WIDE	1. Press the ZOOM WIDE button or turn the joystick clockwise until the image is acceptable 2. Release the button or joystick
ZOOM TELE	1. Press the ZOOM TELE button or turn the joystick anti-clockwise until the image is acceptable 2. Release the button or joystick
IRIS OPEN	Continuously press key OPEN to open iris and increase brightness gain
IRIS CLOSE	Continuously press key CLOSE to close iris and increase brightness gain
FOCUS NEAR	Continuously press key NEAR, focus become near from far, the image becomes foggy from clear or becomes clear from foggy.
FOCUS FAR	Continuously press key FAR, focus become far from near, the image becomes foggy from clear or becomes clear from foggy.
PRESETS	1. When set presetting, press "preset No."+ key "PRESET"(about for 3 seconds) 2. When use presetting, press "preset No."+ key "PRESET" 3. Please refer to operation instruction book for controller.

Remarks:

The following stipulations are for presetting,

Preset()	function
8-Jan	Park position
2-Jan	Alarm input
33	180º flip
34	lever home place
77	Open wiper function
78	Close wiper function
79	Open zoom on
80	Close zoom on
81	Auto low lux shift
82	Open law lux shift （B&W menu）
83	Close law lux shift （color menu）
84	Open wide dynamic
85	Close wide dynamic
86	Open Backlight Compensation
87	Close Backlight Compensation
88	Open video freeze
89	Close video freeze
92-93	Scan control limit
94	Exit menu

2. 2 PTZ FUNCTIONS

This series high-speed P/T camera manual pan speed 0.1 º -100 º/second, manual tilt speed 0.1º ~ 80º/second.

Pan/tilt speed and lens zoom is proportional, darker the lens zoom, slower the speed is!

The current position of P, T, Z three orientations (presetting positions) may be stored and repeat use.

3. FUNCTION DESCRIPTIONS

3.1 Screen menu function (OSD)

Camera and pan & tilt may be parameters are displayed by OSD menu

3.2 Proportional pan

Horizontal and tilt speed change automatically with the zoom changes. When wide zooming, the camera speeds down. When narrow zooming, the camera speeds up to allow better tracking effect.

3.3 Auto scan

Auto scan refers to the function of 360^0 continuous scan the images at certain speed on the horizontal lever when keeping the pitch angle unchanged. The left and right limits may be set for continuous scan at certain speed on the horizontal lever.

3.4 Installation mode

The camera may be installed upwards or upside down according to requirements. The image will always be showed positive on the monitor no matter the installed position.

3.5 Preset

Any position of P/T camera PTZ may be stored. We call it preset (pre-established position). The preset may be transferred and deleted.

3.6 Preset tour

The P/T camera will transfer pre-established preset 1-8 every 10 second. It will leap over to next preset position if position in not any of the 1-8.

3.7 Pattern

The PTZ orientation and specific tracking pattern may be stored. The pan & tilt UP, DOWN, LEFT, RIGHT and the lens' FAR, NEAR parameters may be stored. Also we may call the presetting. This function may be used to record and simulate the operator's operation process.

3.8 Position Zero

The camera will turn to horizontal and tilt zero by preset 34 when accidental desynchronizing appears or the operator wants to find zero position during working process. It may reset the orientation as a convenience for the operator

3.9 Low lux (color / black & white) function

The camera automatically changes CCD lux according to surrounding light. Color image changes to black & white in low lux; black & white image changes to color in high lux (camera dependent)

3.10 Auto focus

The camera automatically adjusts lens focus to keep clear image if auto focus mode. Manually operate FAR or NEAR focus adjustment may also adjust focus. The P/T camera will recover auto focus adjustment function if operate horizontal, vertical rotation or control lens zoom.

3.11 Auto iris function

The camera automatically adjusts iris to keep normal brightness in auto iris mode. Manually operate OPEN or CLOSE iris adjustment button may also adjust iris. The P/T camera will recover auto adjustment function if operate horizontal, vertical rotation or control lens zoom.

3.12 Backlight compensation

The object will become black as the shadow if strong light appears in background. Backlight compensation function may compensate the brightness automatically to dark objects in bright light background and adjust the brightness background to avoid the image full of brightness and get clear image. Too strong backlight may make the object illegibility.

4. MENU OPERATION

This series camera has in-built menu to setup to camera and lens' parameter. In this chapter, you will get a whole knowledge of the camera, and get some useful operation skills.

The basic operation of the menu includes: move menu bar, enter next menu, turn back to previous menu, change setting value, confirm change and cancel change.

This P/T camera opens menu by preset 95 and exit by preset 94 according to P control protocol. Please refer to controller instruction book for other control equipments.

Press "9"+"5"+"PRESET"

Press key 95+ PRESET to enter pan tilt camera menu

Press "9"+"4"+"PRESET"

Press key 94+ PRESET to exit pan tilt camera menu

5. MENU DESCRIPTION

The DLM1772-DLM1775 series P/T camera system is set by default to P/D protocol. Use preset position No.95 to open the main menu. For other protocols, please refer to protocol instruction.

NOTE:

1. "< >"symbol means it contains next menu
2. use "up, down" key to move cursor "□", use "OPEN or CLOSE" key to confirm or exit the menu
3. when press "OPEN" key, the cursor becomes"□", then may use "UP or DOWN" key to amend the parameter; press OPEN key when finish your amendment.

5.1 MAIN NENU

<SYSTEM INFORMATION>
<CAMERA>
<PAN/TILT>
<POWER UP>
<LINE SYNC>
<ALARM>
<AUX>
RESET CAMERA

〈SYSTEM INFORMATION 〉
〈CAMERA 〉
〈PAN/TITL 〉
〈POWER UP〉
〈LINE SYNC〉
〈ALARM〉
〈AUX〉
RESET CAMERA

EXIT

5.2 SECOND MENU I

P/T TYPE
COMM
PROTOCOL
ADDRESS
VERSION
AUTO EXIT TIME
BACK

SYSTEM INFORMATION	
CAMERA TYPE	
COMM	4800、N、8、1
PROTOCOL	P
ADDRESS	1
VERSION	1.10
AUTO EXIT TIME	5
BACK	

NOTE: Except "AUTO EXIT TIME", items may not be modified only displayed in the menu.

5.3 CAMERA MENU I

AUTO FOCUS
ZOOM LIMIT
ZOOM SPEED
SHARNESS LEVEL
BACKLIGHT COMP
VIDEO FREEZE
DAY/LIGHT MODE
STABILIZER
WDR
<NEXT>
BACK

CAMERA	
AUTO FOCUS	ON
ZOOM LIMIT	X26
ZOOM SPEED	5
SHARPNESS LEVEL	10
BACKLIGHT COMP	OFF
VIDEO FREEZE	OFF
DAY/NIGHT MODE	AUTO
STABILIZER	ON
WDR	ON
〈NEXT〉	
BACK	

NOTE: stabilizer and WDR are camera module dependent, if the function shows in the menu; it is available

AUTO FOCUS Default Setting: ON
FOCUS MODE: ON and OFF

ZOOM LIMIT Default Setting: X18
Zoom Limit displays different limitations with different cameras

ZOOM SPEED Default Setting: 5
Range of zoom speed is between 0~7, different camera shows different zoom

SHARPNESS LEVEL Default Setting: 10
Sharpness lever is between 0~15 and AUTO

BACKLIGHT COMP Default Setting: OFF
Backlight COMP: ON and OFF

VIDEO FREEZE Default Setting: OFF
Video Freeze Mode: ON and OFF

DAY/NIGHT Default Setting: AUTO
Day/Night Mode: Auto-change, Day color only, Night black/white only

STABILIZER Default Setting: OFF

Stabilizer Mode: ON and OFF, Camera with this function displays in menu

WDR Default Setting: OFF

WDR Model (for 23X HITACHI VK-S454): ON and OFF, it works when the backlight compensation is OFF.

5.3.1 CAMERA MENU II

AUTO IRIS
AUTO IRIS LEVEL
AUTO IRIS PEAK
SHUTTER MODE
SHUTTER SPEED
AGC MODE
AUTO WHITE BALANCE
R GAIN
B GAIN
BACK

<NEXT>	
AUTO IRIS	AUTO
AUTO IRIS LEVEL	12
AUTO IRIS PEAK	10
SHUTTER MODE	AUTO
SHUTTER SPEED	1/50
AGC MODE	AUTO
GAIN	2db
AUTO WHITE BALANCE	AUTO
R GAIN	210
B GAIN	157
BACK	

AUTO IRIS Default Setting: AUTO

Auto Iris: AUTO and MAN

AUTO IRIS LEVEL Default Setting: 12

When the auto iris is under the circumstances of MAN, 0~17 may be selected.

AUTO IRIS PEAK Default Setting: 10

When the auto iris is under the circumstances of MAN, 0~10 may be selected

SHUTTER MODE Default Setting: AUTO

Shutter Mode: AUTO and MAN

SHUTTER SPEED Default Setting: 1/50

When shutter speed under the circumstances of MAN, 1/1~1/10000 may be selected, which is according to the camera parameter.

AGC MODE Default Setting: AUTO

AGC MODE: Auto and MAN

GAIN Default Setting: 2db

Gain Level may be selected between 0~28

AUTO WHITE BALANCE Default Setting: AUTO

Auto White Balance Mode: AUTO and MAN

R GAIN Default Setting: 21

When auto white balance is under the circumstance of MAN, 0~255 may be selected.

B GAIN Defaulting Setting: 157

When auto white balance is under manual control, 0~255 may be selected

5.4 PAN/TILT MENU

AUTO FLIP
PROPORTIONAL PAN
PARK ACTION
PARK TIME
PRESET TOUR TIME
SCAN SPEED
MANUAL STOPS
ANGLE DISPLAY
SET AZIMUTH ZERO
BACK

PAN/TILT	
AUTO FLIP	ON
PROPORTIONAL PAN	OFF
PARK ACTION	NONE
PARK TIME	30min
PRESET TOUR TIME	5s
SCAN SPEED	10d/s
MANUAL STOPS	OFF
SCAN STOPS	OFF
ANGLE DISPLAY	ON
SET AZIMUTH ZERO	
BACK	

AUTO FLIP Default Setting: ON
Auto Flip Mode: ON and OFF

PROPORTIONAL PAN Default Setting: OFF
Proportional Pan Mode: ON and OFF

PARK ACTION Default Setting: NONE
Park Action Mode: there are 12 modes such as NONE, 1PRESET~8PRESET, SCAN, PRETOUR, PATTERN and so on

PARK TIME Default Setting: 30minutes
Park Time: 5~60 sec selectable

SCAN SPEED Default Setting: 10d/s
Scan Speed: 1 d/s~40 d/s selectable

MANUAL STOPS Default Setting: OFF
Manual Stops Mode: ON and OFF

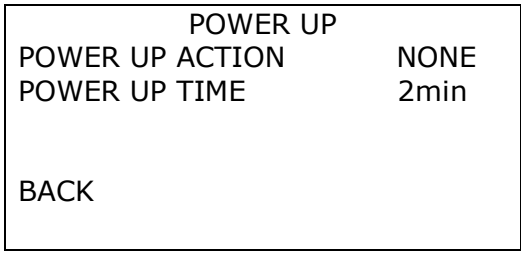
SCAN STOPS Default Setting: OFF
Manual Stops Mode: ON and OFF

ANGLE DISPLAY Default Setting: ON
Angle Display Mode: ON and OFF, orientation of P/T and camera zoom may display when it is ON.

SET AZIMUTH ZERO
Turn the camera to the position that would be defined to be azimuth zero at first, then press OPEN key to confirm it.

5.5 POWERING UP ACTION

POWER UP ACTION
POWER UP TIME
BACK



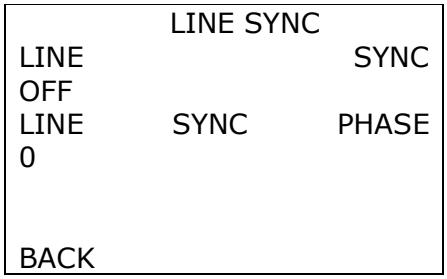
POWER UP ACTION Default Setting: NONE
Power Up Action Mode: NONE, 1PRESET~8PRESET, SCAN, PRETOUR, PATTERN selectable.

POWER UP TIME Default Setting: 2minutes
Power Up Time may be selected from 2s to 10s

5.6 LINE SYNC

LINE SYNC
LINE SYNCPHASE

BACK

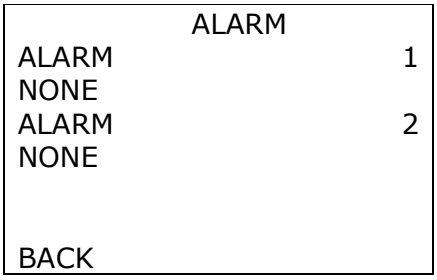


LINE SYNC Default Setting: ON
LINE SYNC MODE: ON and OFF

LINE SYNC PHASE Default Setting: 0
Line Sync Phase: 0~359 selectable

5.7 ALARM

ALARM1
ALARM2
BACK



ALARM1
Default Setting: NONE
Alarm1: NONE, 1PRESET~8PRESET, SCAN, PRETOUR and PATTERN selectable

5.8 AUXILLIARY

AUX	
AUX1 MODE	OFF
AUX2 MODE	OFF
BACK	

WIPER
INFRARED

BACK

WIPER Default Setting: OFF
Wipe input is relay input, the mode: ON and OFF

INFRARED Default Setting: OFF
Infrared input is relay input, the mode: ON and OFF

5.9 RESET CAMERA.
When users choose this item, camera will reset to the default setting.

6. DIP SWITCH SETTING
6.1 Pan/tilt Controls

Note: When one control bus controls several (more than 2) Pan/Tilt cameras, it needs a 120ohm resistance at +/- terminals Com RS-485 in the farthest end of pan tilt camera in order to ensure the normal work of control signal.

6.2 Switch setting for SW1

Note: Switch SW1 is used to set protocol, camera and baud rate

Protocol, camera, baud rate	SW1 setting							
	1	2	3	4	5	6	7	8
PELCO-P Protocol	ON	OFF	--	--	--	--	--	--
PELCO-D Protocol	OF	ON	--	--	--	--	--	--
SONY camera	--	--	ON	OFF	ON	OFF	--	--
HITACHI camera	--	--	OFF	ON	ON	OFF	--	
1200	--	--	--	--	--	--	OFF	OFF
2400	--	--	--	--	--	--	ON	OFF
4800	--	--	--	--	--	--	OFF	ON
9600	--	--	--	--	--	--	ON	ON

6.3 Switch setting for SW2

Note: Switch SW2 is used to set receiving address.

Protocol P addresses setting:

Address	Switch setting							
	SW2-	SW2-	SW2-	SW2-	SW2-	SW2-	SW2-	SW2-
1	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
3	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
5	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
6	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
7	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
8	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
9	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
10	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
11	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
12	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
13	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
14	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
15	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
16	ON	ON	ON	ON	OFF	OFF	OFF	OFF
17	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
18	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
19	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
20	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
21	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
22	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
23	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
24	ON	ON	ON	OFF	ON	OFF	OFF	OFF
25	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
26	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
27	OFF	ON	OFF	ON	ON	OFF	OFF	OFF
28	ON	ON	OFF	ON	ON	OFF	OFF	OFF
29	OFF	OFF	ON	ON	ON	OFF	OFF	OFF
30	ON	OFF	ON	ON	ON	OFF	OFF	OFF
31	OFF	ON	ON	ON	ON	OFF	OFF	OFF
32	ON	ON	ON	ON	ON	OFF	OFF	OFF
-----	----	----	----	-----	----	----	----	----
255	OFF	ON	ON	ON	ON	ON	ON	ON
256	ON	ON	ON	ON	ON	ON	ON	ON

Protocols D address setting:

Address	Switch setting							
	SW2-1	SW2-2	SW2-3	SW2-4	SW2-5	SW2-6	SW2-7	SW2-8
1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
5	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
6	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
7	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
8	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
9	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
10	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
11	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
12	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
13	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
14	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
15	ON	ON	ON	ON	OFF	OFF	OFF	OFF
16	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
17	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
18	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
19	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
20	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
21	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
22	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
23	ON	ON	ON	OFF	ON	OFF	OFF	OFF
24	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
25	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
26	OFF	ON	OFF	ON	ON	OFF	OFF	OFF
27	ON	ON	OFF	ON	ON	OFF	OFF	OFF
28	OFF	OFF	ON	ON	ON	OFF	OFF	OFF
29	ON	OFF	ON	ON	ON	OFF	OFF	OFF
30	OFF	ON	ON	ON	ON	OFF	OFF	OFF
31	ON	ON	ON	ON	ON	OFF	OFF	OFF
32	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
----	----	----	----	----	----	----	----	----
254	OFF	ON	ON	ON	ON	ON	ON	ON
255	ON	ON	ON	ON	ON	ON	ON	ON

Appendix A TROUBLESHOOTING

1. Image

Problem: No image displayed on monitor?

☐First check if the power supply wire connection, voltage, indicator and P/T camera work well, and then check the video wires, or it may be a problem with the cam module.

Problem: Image becomes black after self check, but may be controlled

☐Control system may have changed the camera iris parameters. Enter the camera menu then reset camera.

Problem: Image becomes foggy when P/T camera connects with hard disk video recorder.

☐Maybe it is related with the compressed card of hard disk video recorder.

Problem: abnormal display of image

☐Check the video connecting wires, connecting sockets and camera flat wires.

Problem: Iris is small with many snowflakes after connection

☐The camera parameter has changed. Please enter the menu to reset the camera.

Problem: The camera may only focus in one position, other positions do not focus.

☐Change the position of P/T and see if condition persists. If yes, it may be caused by camera control drive focus system.

Problem: image may not be clearly seen even at MAX. Zoom

☐Maybe electronic zoom open or the observed object is too close for imaging.

Problem: the image is reddish or greenish. Does the WB parameter change?

☐The camera parameter changed. Enter the menu to reset the camera.

Problem: the color - to black & white function in camera does not change

☐Rotate control to other angle and see if condition changes. If not, reset camera parameter.

2. Control

Problem: the single pan tilt camera may not be controlled by keyboard or other control equipment?

☐First check if control line RS-485 is well connected to designed position with right direction. Then check the control equipment and P/T control protocol, baud rate and address. If it still may not be controlled, use elimination to check whether the control equipments or camera has troubles.

Problem: single pan tilt may be controlled but multi-cameras may not be controlled

☐It may be caused by reflection of signal RS-485. Merge a 120 ohm resistance to the 485 terminal control wires of the farthest camera.

Problem: other controls are normal except it may not rotate at a direction.

☐First check if any mechanical troubles without powering unit. If it may run well, check if the belt broke or loose. If yes, it is caused by the control decoder board troubles.

Problem: the pan tilt automatically rotates after power on.

☐First check if the power on mode is auto scan mode; if not, firstly cut RS-485 control lines to see if it persists. If it stopped, it may be caused by the scrambled code from controller or interference to RS-485 lines.

Problem: the provided keyboard software may control, but the DVR may not control or only may control some?

☐DVR control protocol is not compatible with the product or the function is not complete.

Problem: why does the same pan tilt have different control speeds at different hard disk video recorder?

☐Speed command codes in control software of DVR are different.

Problem: DVR may not control speed of pan tilt

☐Control command code of control software in DVR only has a fixed speed.

Problem: the camera rotates disorderly. The image is blackish or whitish.

☐There is interference with the RS-485 lines, check the equipment in the lines such as optical transmitter and receiver.

Problem: the pan tilt camera may be controlled normally in the morning and evening, but it may not be controlled at the noon of summer.

☐High temperature may cause lower down of control line anti-jamming or change to control equipment and CMOS chips parameters to create problems. Check if the temperature is over than the specified limit and if fan is functioning.

Problem: pan tilt camera continuously does self-check up after power on

☐The supply voltage is too low or the power is not enough. The matching transformer of 2.5A 24VAC is recommended. The installation distance should be no more than 30m.

3. Installation

Problem: what is the maximum distance of video wire and what requirements does it have to wire materials?

☐The video wire also has inner loss as the power wire. The more the wire is and the small the specification is, the worse loss it will be. The high the signal frequency is, the obvious the loss is. The normal video wires models and the MAX. Transmission distance is listed in following table:

Video wire model	Max. distance	Video wire model	Max. distance
75-2	About 150m	75-5	About 370m
75-3	About 200m	75-7	About 500m
75-4	About 270m	75-9	About 680m

Problem: what wire and transmission distance should RS-485 control line take?

☐Transmission distance of RS-485 is related to wire diameter and transmission speed. Max. Transmission distance for RS-485 is 1200m according to the specified 9600b/s transmission speed for 1.0mm 2 UTP.

Remarks: the same model wires may be different for produced by different manufacturers. Above data is the normal wire transmission reference distance.